Guidelines for Regional Marine Ecosystem Approaches to Management

Mark C. Holliday, Ph.D.

Director, NOAA Fisheries Office of Policy

NOAA Fisheries has developed a discussion paper to advance implementation of regional marine ecosystem approaches to management across federal agencies. Presentation looks at:

- Origins and context for development of the guidelines
- Possible strategic goals and objectives for ecosystem approaches to management
- Potential processes and organizational structure for advancing ecosystem approaches nationally
- Possible roles and implication for Regional Fishery Management Councils
- The relationship of the guidelines to recommendations of the Pew Ocean Commission the U.S. Comm. on Ocean Policy
- Potential next steps for the adoption and use of the guidelines.

Origin and context

- 1987 NMFS *Program development plan for ecosystems monitoring and management*
- 1995 FAO *Code of conduct for responsible fishing*
- 1996 Canada's Oceans Act
- 1998 Australia's Ocean Policy
- 1999 NMFS *Ecosystem-based fishery management*
- 2003 MAFAC *Strategic Guidance for implementing an ecosystem-based approach to fisheries management*
- 2003 Fisheries Ecosystem Plan Working Group
- 2003 FAO *The Ecosystem approach to fisheries*
- 2003 PEW *America's living oceans: Charting a course for sea change*
- 2003 NOAA *Strategic plan*/Ecosystem Goal Team
- 2003 Millennium Ecosystem Assessment
- 2004 USCOP *An ocean blueprint for the 21st century*
- 2004 NOAA *Guidelines for regional marine ecosystem approaches to management*

Objectives of Guidelines

- To ensure that Ecosystem Approaches to Management by federal, state and other entities develop consistently across ecosystems and regions.
- To promote efficiency, integration and most importantly, success.
- To stimulate discussion of ideas in advance of legislation requiring ecosystem approaches to fisheries management.

What is the definition of an Ecosystem Approach to Management?

An *ecosystem approach to management* (EAM) is management that is adaptive, geographically specified, takes account of ecosystem knowledge and uncertainties, considers multiple external influences, and strives to balance diverse social objectives.

What is an EAM in practice?

Broader focus than an FEP – not just spatially, but a wider range of ecosystem drivers evaluated, a wider range of ecosystem values considered.

Overall ecosystem goals and objectives will be described and managed in:

- ✓ Regional Marine Ecosystem Strategies (RMES)
- ✓ Regional Marine Ecosystem Implementation Plans

Enable other agencies and stakeholders besides NOAA, with interests and regulatory authority (e.g., transportation, energy, water and air quality, etc.) to participate in a common venue.

Propose a collaborative process to develop integrated management approaches for both consumptive and non-consumptive uses of the ecosystem.

Possible Outcome & Goals

Desired Outcome: Derive the maximum sustainable value to society from the regional marine ecosystems under our stewardship.

To obtain this outcome, three strategic goals must be sought by every RMES:

1. **Ensure sustainability of resources**
2. **Conserve biodiversity**
3. **Maintain opportunities for economic, social and cultural access to resources**

Ecosystems Services: the benefits people obtain from ecosystems

Provisioning Services

Products obtained from ecosystems

- Food
- Fresh water
- Fuel wood
- Fiber
- Biochemicals
- Genetic resources

Regulating Services

Benefits obtained from regulation of ecosystem processes

- Climate regulation
- Disease regulation
- Water regulation
- Water purification

Cultural Services

Nonmaterial benefits obtained from ecosystems

- Spiritual & religious
- Recreation & ecotourism
- Aesthetic
- Inspirational
- Educational
- Sense of place
- Cultural heritage

Supporting Services

Services necessary for the production of all other ecosystem services

- Ecological value
- Nutrient cycling
- Primary Production

Source: Millennium Assessment 2003 *Ecosystems and human well-being; A framework for assessment.*

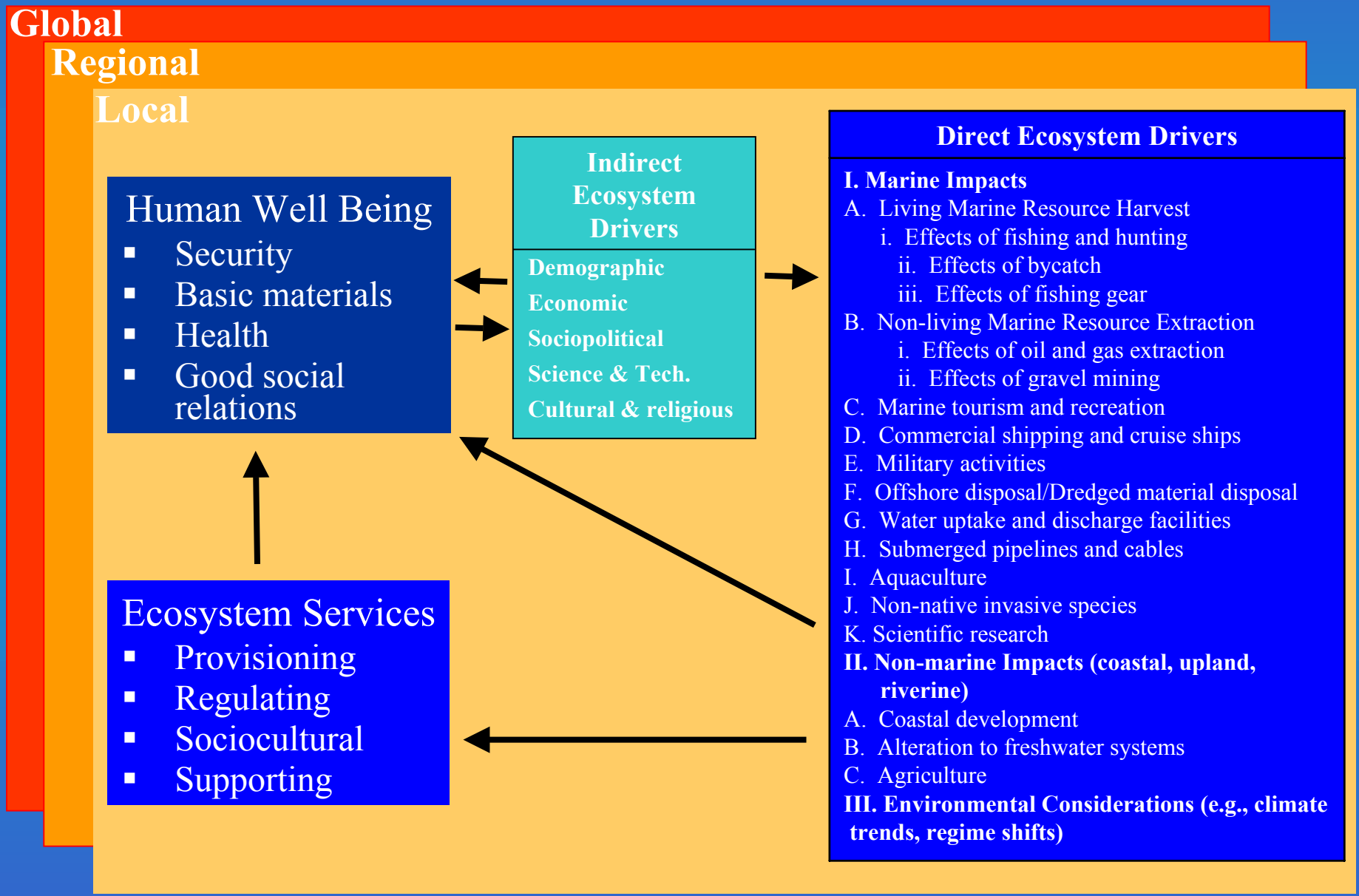
Multiple Concepts of *"Ecosystem Value"*

Utilitarian values: *ecosystem services have value because people derive utility (benefits) from their use, either directly or indirectly (use values). People also value ecosystem services that they are not currently using (non-use values).*

Non-utilitarian values *– ecological, sociocultural and intrinsic values – derived from ethical, cultural, religious and philosophical bases.*

Acknowledging the diversity of value concepts, and measuring the different values, will enable decision makers to appropriately evaluate tradeoffs between different policy options that result in different ecosystem conditions now and in the future.

Ecosystem conceptual framework



Regional Ecosystem Councils

Regional Ecosystem Council

Federal, State, Local Agencies
Regional Fishery Mgt. Councils
Tribal Organizations
Industry & resource users
Community & NGO interest groups
Academia
Public

Action

Implementation & Operations Group

Federal & State Regulators

Coordination Integration / Support

Secretariat

(NOAA)

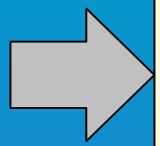
Task / Issue Specific

Work Groups
Work Groups
Work Groups
Work Groups

Regional Marine Ecosystem Strategy

Developed by:
Regional Ecosystem Council, comprised of:
– NOAA, EPA, COE, USDA, other federal agencies
– State, tribal and local natural resource and land use planning agencies
– Regional Fishery Management Council(s)
– Interstate and state fishery management agencies
– Stakeholder and constituent groups

Based on:
- Statutory mandates
- Agencies' strategic plans
- Regional Fishery, Coastal Zone, Protected Resource, Environmental Mgt. plans
- Underlying generic principles of ecosystem-approaches to management
- Process guidance for how to develop and implement consensus on objectives



Regional Marine Ecosystem Strategy
Strategic Goals, Objectives and Performance Measures

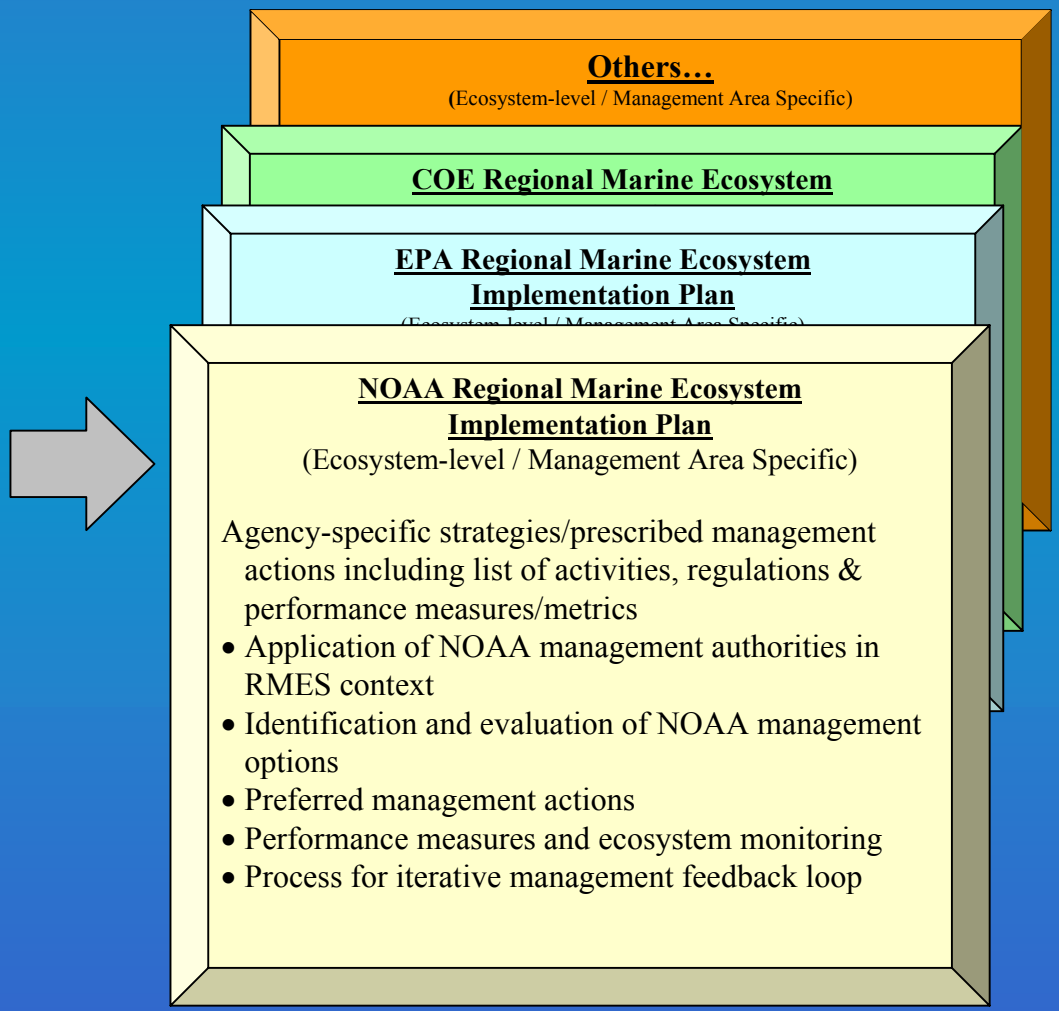
- Every RMES includes 3 strategic goals:
  - Conserve biodiversity
  - Ensure sustainability of resources
  - Maintain economic, social, & cultural access to resources
- Operational goals and objectives (e.g., target conditions, thresholds, floors, reference points)
- Definition & overview of management area
- Information necessary to understand and make management decisions
- Performance metrics
- Process for iterative management feedback loop

Regional Marine Ecosystem Implementation Plans

Developed by:
Regulatory Agencies/Governance Authorities & Stakeholders and Collaborators:
Other federal/state/local agencies,tribes, commissions, boards
Existing advisory bodies
Industry/trade associations
Conservation organizations
Community and interest groups
Universities/researchers
General Public

Based on:
Strategic RMES Goals and Objectives
Agency regulatory products *(e.g., for NOAA Fisheries: FMPs; Rebuilding plans; Recovery plans; Take Reduction plans; Research plans; Biological opinions; EIS/EAs)*

Regional-level issues and needs in the management area



RMES/RMEIPs vs FMPs

- RMES/RMEIPs:
  - Provides the umbrella or context under which FMPs are developed or modified
  - Does not replace FMPs but guides them
- Multiple FMPs may fall under same RMES/RMEIP

Possible Role of Regional Fishery Management Councils in EAM

Short term

- Help establish priorities for regional ecosystems
- Modify & develop FMPs to achieve reference points, trajectories specified in ecosystem goals and objectives

Long term

- Participate as members of Regional Ecosystem/Ocean Councils
- Membership to include broader stakeholder base

Benefits of Adopting an EAM

- Greatest value derived from sustainable resource use
- Framework for making integrated resource management decisions
- Competing objectives reconciled at higher governance levels

Pew Commission

"...nation needs to ensure healthy productive and resilient marine ecosystems for present and future generations…organize institutions and forums capable of managing on an ecosystem basis…develop and oversee the implementation of comprehensive regional ocean governance plans"

- Restructure/reorient fishery mgt. institutions & policies to protect and sustain the ecosystems on which fisheries depend
- Establish regional ocean ecosystem councils
- Large Marine Ecosystem delineation

US Commission on Ocean Policy

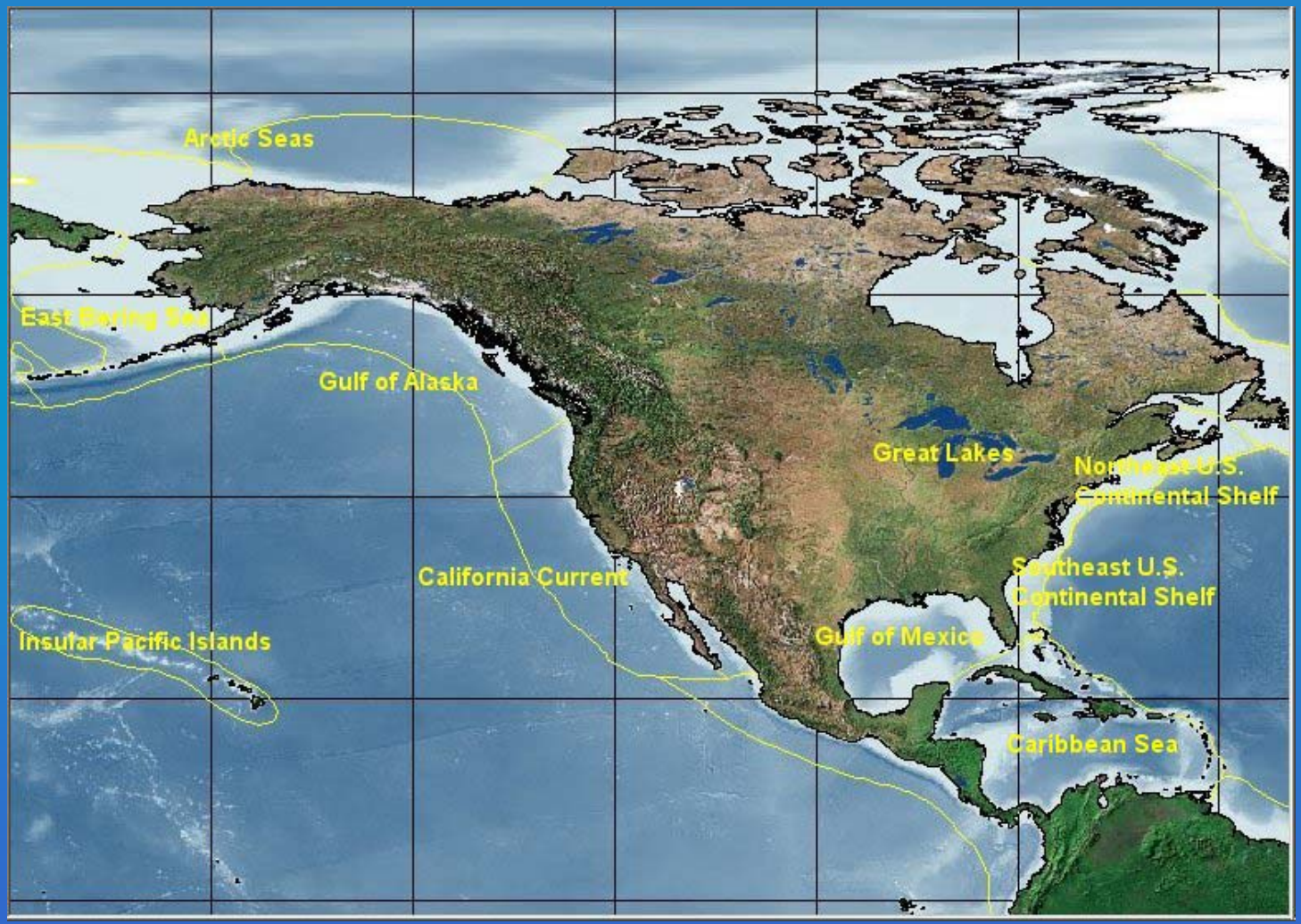
"New ocean and coastal policies should avoid the common practice of managing one activity or one part of an ecosystem without considering the impacts on and influence of other parts, including its human inhabitants…ocean policies should promote an ecosystem-based management approach…"

- Adopt Ecosystem approach principle
- Regional Ecosystem Councils
- Large Marine Ecosystem delineation
- Characterized by regional, collaborative & inclusive approach

Possible Next steps

- Adopt 10 ecoregions based on Large Marine Ecosystem (LME) delineation
- Define inland boundaries as coastal watersheds + diadromous fish habitat
- Expand delineation of regional ecosystem components within LMEs
- Resource, plan and implement additional Regional Stakeholder Workshops
  - Delineation of sub-ecoregions within each regional ecosystem
  - Review of the inland boundary beyond the coastal watersheds
  - Initial development of ecosystem health and productivity indicators
- Further develop ecosystem decision support tools
- Advance EcoGIS applications for fisheries management

Backup: Ten Regional Ecosystems based on LMEs



Backup:
Large Marine Ecosystems

Pacific Islands may be treated as a “regional complex” of several LMEs.